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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/801,241	03/07/2001	David Latta	ARC.003A	5003
27299	7590	12/22/2003	EXAMINER	
GAZDZINSKI & ASSOCIATES 11440 WEST BERNARDO COURT, SUITE 375 SAN DIEGO, CA 92127			MASON, DONNA K	
			ART UNIT	PAPER NUMBER
			2111	8
DATE MAILED: 12/22/2003				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/801,241	LATTA, DAVID
	Examiner	Art Unit
	Donna K. Mason	2181

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 28 April 2003.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) 23, 24, and 26-29 is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-22, 25 and 30 is/are rejected.
- 7) Claim(s) 8, 18 and 21 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 27 July 2001 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) The translation of the foreign language provisional application has been received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>6-7</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-22, 25, and 30, drawn to a processing device and a method of accessing data disposed within a plurality of memory banks, classified in class 710, subclasses 316 and 317.
 - II. Claims 23 and 24, drawn to a method of testing a function, classified in class 714, subclass 42.
 - III. Claims 26-29, drawn to a method of generating a design for an integrated circuit, classified in class 714, subclass 1.
2. The inventions are distinct, each from the other because of the following reasons:
3. Inventions I, II, and III are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable.
4. In the instant case, invention II has separate utility such as: in processing devices and methods that do not access data disposed within a plurality of memory banks; and in methods that do not generate a design for an integrated circuit.
5. Invention III has separate utility such as: in processing devices and methods that do not access data disposed within a plurality of memory banks. See MPEP § 806.05(d).

6. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.
7. Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Groups II and III, restriction for examination purposes as indicated is proper.
8. During a telephone conversation with Robert F. Gazdzinski (Reg. No. 39,990) on December 4, 2003, a provisional election was made without traverse to prosecute the invention of Group I, claims 1-22, 25, and 30. Affirmation of this election must be made by applicant in replying to this Office action. Claims 23, 24, and 26-29 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to non-elected inventions.

Specification

The disclosure is objected to because of the following informalities: The term "RISC" is used throughout the specification. Although it appears that Applicant is referring to the acronym for a "reduced instruction set computer," it is not clear that this is what is intended because applicant has not provided a definition for "RISC." Accordingly, it is recommended that applicant define "RISC" at its first occurrence in the specification. Appropriate correction is required. (See 37 CFR 1.71).

Claim Objections

9. Claims 8, 18, and 21 are objected to because of the following informalities:
- In claim 8, line 2, change ":" to --:--.
- In claim 18, line 13, change "with in" to --within--.
- In claim 21, line 3, it the purpose and/or meaning of "(imm)" following "immediate" is unclear. It is recommended that "(imm)" be deleted from the claim. Appropriate correction is required. (See 37 CFR 1.75).

Claim Rejections - 35 USC § 112

10. The following is a quotation of the second paragraph of 35 U.S.C. 112:
- The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
11. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
12. Claim 1 recites the limitation "said memory" in lines 8-9. There is insufficient antecedent basis for this limitation in the claim. (It should be noted that for examination purposes, claim 1 has been interpreted such that "said memory" is replaced with --said storage device--).

Claim Rejections - 35 USC § 102

13. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

14. Claims 1-4, 9, 10, 14, 15, 18, 19, 25, and 30 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,638,662 to Blackmon, et al. ("Blackmon").

With regard to independent claims 1, 9, 18, 25, and 30, and dependent claim 10, Blackmon discloses a processor interface device (Fig. 1, item 8) and a method of accessing data disposed within a plurality of memory banks. The processor interface device includes at least one memory port (Fig. 2, items E and F), the memory ports adapted to transfer data and signals to and from a storage device (Fig. 1, items 16a-16n), at least one function port (Fig. 2, items A, B, C, and D), the function ports adapted to transfer data and signals to and from a macro function (Fig. 1, items 10a-10d), a data transfer fabric (Fig. 1, item 14 and Fig. 2, item 30) adapted to transfer data and signals between the memory ports and the function ports, and an arbitration unit (Fig. 2, items 32, 34, and 36) adapted to arbitrate access to various portions of the storage device by the macro functions.

With regard to dependent claims 2-4, 14, 15, and 19, Blackmon discloses a processor interface device, where the data transfer fabric is a crossbar switch fabric (Fig. 1, item 14), and where the processor interface device further includes a macro

function in data communication with the function ports (column 3, lines 48-50), the macro function being controlled at least in part by a processor instruction associated with the macro function, where the macro function may access the at least one memory port. The processor interface device also further includes a plurality of macro functions (column 3, lines 48-50) in data communication with respective ones of the function ports, the interface device further adapted to allow simultaneous access to multiple ones of the memory ports (column 3, lines 56-67 to column 4, lines 1-3) by respective ones of the macro functions via the function ports.

Therefore, Blackmon teaches the invention as claimed.

15. Claims 1-3, 9, 10, 25, and 30 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,125,429 to Goodwin, et al. ("Goodwin").

With regard to independent claims 1, 9, 25, and 30 and dependent claim 10, Goodwin discloses a processor interface device (Fig. 1, item 10) including at least one memory port (not shown), the memory ports adapted to transfer data and signals to and from a storage device (Fig. 1, items 30, 32, 34, and 36), at least one function port (not shown), the function ports adapted to transfer data and signals to and from a macro function (Fig. 1, items 20, 22, 24, and 26), a data transfer fabric (Fig. 1, item 12) adapted to transfer data and signals between the memory ports and the function ports, and an arbitration unit (Fig. 1, 14) adapted to arbitrate access to various portions of the storage device by the macro functions.

With regard to dependent claims 2 and 3, Goodwin discloses a processor interface device, where the data transfer fabric is a crossbar switch fabric (Fig. 1, item

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12), and where the processor interface device further includes a macro function in data communication with the function ports, the macro function being controlled at least in part by a processor instruction associated with the macro function, where the macro function may access the at least one memory port.

Therefore, Goodwin teaches the invention as claimed.

Claim Rejections - 35 USC § 103

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

17. Claims 5-8, 11-13, 16, 17, 20, 21, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blackmon in view of U.S. Patent No. 5,471,592 to Gove, et al., ("Gove").

As described above with regard to the anticipation rejection, Blackmon teaches all the features of independent claims 1, 9, and 18. With regard to dependent claims 5, 7, 8, and 20, Blackmon does not expressly disclose a processor interface device, where the at least one macro functions is controlled by at least one processor instruction associated with an instruction set of a parent processor, where data is processed in a pipeline fashion. Gove discloses a processor interface device, where the at least one macro functions is controlled by at least one processor instruction associated with an

instruction set of a parent processor, where data is processed in pipeline fashion (Fig. 1, item 12).

With regard to dependent claims 6 and 16, Blackmon does not expressly disclose the processor interface device where the parent processor is a RISC processor and where the second data processor is a digital signal processor. Gove discloses a processor interface device where the parent processor is a RISC processor and the second data processor is a digital signal processor (column 14, lines 46-56).

With regard to dependent claims 11-13, 17, 21, and 22, Blackmon does not expressly disclose the device where at least one function controller has a plurality of registers. Gove discloses the claimed features as described in column 12, lines 20-50).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the parent processor of Gove with the processing interface device of Blackmon. The suggestion or motivation for doing so would have been so that the main processor could assure an orderly flow of data (column 7, lines 35-38).

Therefore, it would have been obvious to combine Gove with Blackmon to obtain the invention as specified in claims 5-8, 11-13, 16, 17, 20, 21, and 22.

Conclusion

18. A shortened statutory period for reply is set to expire THREE MONTHS from the mailing date of this communication. Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this communication.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Donna K. Mason whose telephone number is (703) 305-1887. The examiner can normally be reached on Monday - Friday, 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark H. Rinehart can be reached on (703) 305-4815. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.


XUAN M. THAI
PRIMARY EXAMINER

DKM

